2008 SIGMA: HRM BASICS

New to exercise? How long should you exercise? How hard should you work out?

When most Americans decide that it is time to get into shape, they are typically very excited. They join a gym, or buy a new pair of running shoes, or maybe a new bike… Howeve after the first two weeks, more than 60% completely give up their fitness aspirations. Why? Without knowing how much effort is required during the initial stages of exercise, ove exertion leads to muscle soreness, fatigue, and an overall unpleasant experience! People are still under the impression that "No pain, No gain" is the most effective exercise strategy This saying couldn't be further from the truth. With the use of a heart rate monitor you will be able to maximize your exercise efforts to see results faster and more efficiently.

Think of a heart rate monitor like the speedometer in your car. If the speed limit is 55mph and you are driving 70mph, you should slow down. And, if you are only going 40mph y should speed up. During exercise, a heart rate monitor tells you exactly how hard your body is working so you can adjust your intensity accordingly. If you are above your target zo you need to decrease the intensity, if you are below your target heart rate zone you need to increase the intensity.

So, what is a target heart rate zone? A target zone is a range in which you want to keep your heart rate within in order to achieve the desired results of your workouts. It consists o a lower limit (you don't want to exercise below this limit) and an upper limit (you don't want to exercise above this limit).

A heart rate monitor will help you train smarter so that you can quickly achieve your goals and avoid overworking; or underworking. It takes all the guesswork out of exercis Exercising with a HRM is not complicated; you just need to understand why your body reacts the way it does to get the most out of your training.

Your body uses energy (measured in calories) during exercise. How many calories and where these calories come from depends on the level of exertion, or exercise intensity. Calorie come from Fat, Protein, and Carbohydrates. For the most simplified explanation, the food that you consume is broken down and stored for future use. In order to lose 1 pound of b weight, you must use 3,500 more calories than you would typically use during an average day. During exercise, your body pulls inventory from these energy stores as needed so th all of your bodily systems operate appropriately. It is easier to break down carbohydrates, less convenient to break down proteins, and more difficult to break down fats. However, lil most tasks in life, the harder you work, the greater the rewards. And the quality of the reward is just as important! For each gram of fat broken down, your body receives 9 calories of long lasting energy. For each gram of protein, you get only 4. And for each gram of carbohydrate, you get 4 "value" calories. Ideally, we would always use the calories from fat but sometimes, we have to make compromises.

There are 3 generally accepted target heart rate zones :

Target zone 1: 50-65% of your maximum heart rate. This zone is typically called the "FAT BURNING ZONE". When exercising in this target zone your body has enough time to breakdown body-fat as its main source of fuel. You will burn more stored body-fat in this zone than any of the other zones. Also you will find that exercising in this zone is less taxin on your body so you will be able to exercise longer which is the key to losing weight! The longer you exercise, the more calories you burn!

Target zone 2: 65-80% of your maximum heart rate. This zone is known as the "HEATH ZONE" when exercising in this target zone your breathing becomes faster and your body does not have the time to breakdown the stored body-fat for fuel. You body will still use some body-fat for energy but it will start to rely on proteins and carbohydrates that are m accessible. Although breathing becomes faster as you work out, you are still capable of processing enough oxygen to continue exercising for at least 45 minutes or more. This exercis intensity requires more calories, and may cause muscle soreness the following day.

Target Zone 3: 80% PLUS of your maximum heart rate. This zone is the "POWER ZONE" When you exercise in this target zone the amount of body-fat used for energy is greatly decreased and your body is going to rely on stored muscle glycogen for energy needs. Your breathing will be very heavy and your muscles will not be getting enough oxygen maintain its energy needs. When this starts to happen, lactic acid builds and you get that burning sensation in your muscles. Training in this zone puts the most strain on your bo requires the most calories, and is only sustainable for short periods of time.

When first starting an exercise program, how long you exercise and how consistently are more beneficial than how hard. Although you burn more calories at higher intensities, if y start off too hard, your body will require more rest in between workouts. So, now that you understand what a target zone is, let's explain how to find your maximum and resting he rate so we can figure out exactly what your heart rate zone will be.

The Maximum Heart Rate is the highest heart rate that your heart can achieve. Your Max HR will be used in determining your target zones, but is no indicator of your fitness leve Without doing a stress test, the easiest and most common way to find your maximum heart rate is to take 220 minus your age.

- ex. A 25 year old would be: 220-25 = 195bpm

Your resting heart rate on the other hand has significant importance. When your body is completely relaxed, your Resting HR tells you how hard your body has to work at rest. S the lower your resting HR, the healthier you are! To find your resting heart rate put your heart rate monitor on first thing in the morning before you get out of bed and take the low heart rate reading over a 30 second period.

- ex. 70 bpm

Now let's calculate your Fat Burning Target Zone (50-65%).

Lower Heart Rate Limit = 50% * (maxHR- resting HR) + resting HR

- ex. Lower Limit = .50 * (195 – 70) + 70 = 132 bpm
- Note: mathematical order of operations is very important!

Upper Limit = 65% * (maxHR – resting HR) + resting HR

- ex Upper Limit = .65 * (195 – 70) + 70 = 151 bpm

This individual's target should be to keep their heart rate between 132 bpm – 151 bpm while exercising!

For those who are just starting an exercise routine, it is recommended to initially focus on the Fat Burning Zone.
This will allow you to ease your way into a program and help you feel good about yourself.
After 2 to 3 weeks, work towards increasing your intensity so that you are spending 60%
of your time exercising in the Fat Burning Zone, and 40% in the Health Zone.
Before you know it, you'll see the results you've been hoping for!

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